UNIVERSITY OF ILLINOIS
AT CHICAGO

April 5, 1999

School of Public Health (MC 922)
2121 West Taylor Street
Chicago, Illinois 60612-7260

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Dockets Management Branch (HFA-305)
Food and Drug Administration
5630 Fishers Lane, Room 1061
Rockville, Maryland 20852

Re: Docket # 98N-1038, "Irradiation in the Production, Processing, and Handling of Food"

To Whom It May Concern:

I strongly recommend that the FDA should retain the current labeling law, the current terminology of "treated with radiation" or "treated by irradiation," and the use of the radura symbol on all irradiated whole foods.

In its initial petition, the FDA concluded that irradiation was a "material fact" about the processing of a food, and thus should be disclosed. The material fact remains; therefore, labeling must remain. Consumer acceptability, storage qualities and nutrients are clearly affected. Some irradiated foods have different texture and spoilage characteristics than untreated foods. Most fruits and vegetables have nutrient losses that are not obvious or expected by the consumer. In addition, irradiation causes chemical changes that are not evident and are potentially hazardous; meat may have a higher level of the carcinogenic benzene. All irradiated foods contain unique radiolytic products that have never adequately been tested by appropriate extraction and concentration methods (See attached letter by myself and Dr. Gofman, in Science, 1984) and are thus toxicologically uncharacterized. Additionally, there is suggestive experimental and human evidence of the genotoxicity of irradiated foods.

Whether or not the FDA has approved irradiation as safe, consumers certainly have a right to know if this process has been used on their food. As to the kind of label used, I urge that label should be large enough to be readily visible to the consumer, on the front of the package. For displayed whole foods such as produce, a prominent informational display similar to that used for meats should be used (but containing the term "irradiation" and the radura).

Because of longstanding questions on the cancer and other risks of this technology and the need to further assess the public health effects of widespread use of irradiated foods, I urge that the FDA's labeling requirements should not be permitted to expire.

Yours truly,

Samuel S. Epstein, M.D.
Professor Environmental and Occupational Medicine
and
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million in U.S. government research and development programs. This investment has made the difference between continuation of some of these programs and their cancellation. Bilateral cooperation in the nuclear field (fission and fusion) is particularly heavy, both in terms of Japanese investment in the United States and the intensity of the technical exchanges, and most other fields of science and engineering are covered. The overall relationship is unique among nations. It could be dismantled much more easily than it was created.

Goland is to be applauded for making his views known. If more of the many hundreds of American scientists and engineers who have been participants in cooperative or joint programs with their Japanese counterparts were to speak up in like fashion, the tide of intellectual protectionism could be dammed.

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Student Scientific Conferences

A scientific meeting of poster papers presented only by students can provide a simple and remarkably effective way of stimulating scientific interaction and building personal contacts among students from different schools and academic departments who have related scientific and technical interests.

We recently organized such a student-only scientific conference for students working on or with lasers and related optical topics in the San Francisco Bay area. The meeting was held in a public area of the Terman Engineering Building on a Saturday afternoon. Invitations to participate were sent a few months in advance to graduate and undergraduate students in relevant academic departments in colleges and universities in the northern California area. Participants were invited to present a poster paper according to the usual rules; that is, we simply provided a space about 1 meter high and 1.5 meters wide on which illustrations and text could be thumbtacked.

Anyone could attend the meeting, and invitations were distributed to industry through the local chapters of various professional societies. However, only students could submit posters. In addition, a program booklet containing short abstracts supplied by each contributor was distributed at the meeting.

In the final event, there were approximately 40 papers from seven different schools, with department affiliations ranging from physics, chemistry, and biology through electrical, mechanical, and aeronautical engineering. The interaction among the attending students was clearly successful, with animated conversations continuing around individual posters from the time the meeting opened until it closed some 3 hours later. One technique that seemed particularly effective was to place posters that appeared to have related technical content, but were from different schools or departments, in close proximity to each other. This stimulated many fruitful contacts among students who were previously unaware of each other's existence.

There are obviously many other topics or themes around which such meetings could be organized. One interesting observation was that a sizable number of the better-presented posters did not contain the name and department of the student presenting the poster. Does ego development only occur later on in the graduate education process?

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Irradiation of Foods

While recognizing the induction of poorly characterized "unique by-products" in foods after high-energy irradiation, Marjorie Sun (News and Comment, 17 Feb., p. 667) implies that there is no way in which concentrated doses of such products could be evaluated toxicologically in a manner analogous to high-dose carcinogenicity or teratogenicity testing. This is certainly not the case. Stable radiolytic products could be extracted from irradiated food by various aqueous and nonaqueous solvents, which could then be concentrated and subsequently tested. Until such fundamental studies are undertaken, there is little scientific basis for accepting industry's assurances of safety. Similarly, there is little or no basis for accepting Food and Drug Administration (FDA) approval of irradiation as an alternative to ethylene dibromide (EDB) fumigation, let alone for more large-scale use.

These considerations are yet further emphasized by Department of Health and Human Services Secretary Margaret Heckler's support of the industry position in her arbitrary rejection of the FDA's proposal for labeling of radiated food. They are also emphasized by the availability of known safe alternatives to EDB, including aluminum phosphide for grains and cold storage for fruits and vegetables. Public policy on the nation's foods must not be based on reckless gambles and denial of the public's right to basic information and free choice.

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According to a special FDA committee assigned to review food irradiation, radiolytic products are difficult to pinpoint because they are of unknown composition and must be extracted from foodstuffs, which are inherently chemically complex. This committee, formed in 1979 under the Carter Administration, reviewed available studies and concluded that food irradiated at the proposed standard of 100 kilorads contains "a concentration of total radiolytic products in food so low that it is nearly impossible to detect with current techniques."

The Environmental Protection Agency does consider aluminum phosphide to be a suitable alternative to EDB. Agency documents note, however, that aluminum phosphide is explosive and acutely toxic and poses a risk to unprotected applicators.—MARJORIE SUN

Marjorie Sun quotes one of us (D.S.) as saying there was nothing wrong with irradiated food. In fact, as Sun hints, the Center for Science in the Public Interest has not investigated this matter and has never adopted an official position.

MICHAEL F. JACOBSON
DEBORAH M. SCHECHTER
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Erratum: In the report "Communal nursing in Mexican free-tailed bat maternity colonies" by G. F. McCracken (9 Mar., p. 1090), table 1 was incorrectly printed. The correct table is reprinted below.

Table 1. Nonrandom nursing in 167 pairs of *Tadarida brasiliensis mexicana*. $P \ll 0.001$ (G-test).

Result	Nonparental genotype pairs		
	ME	SOD	Both loci
Expected (random)	24.3	21.3	42.5*
Observed	5	2	7

*Factors out nonparental combinations that would be detected at both loci.

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